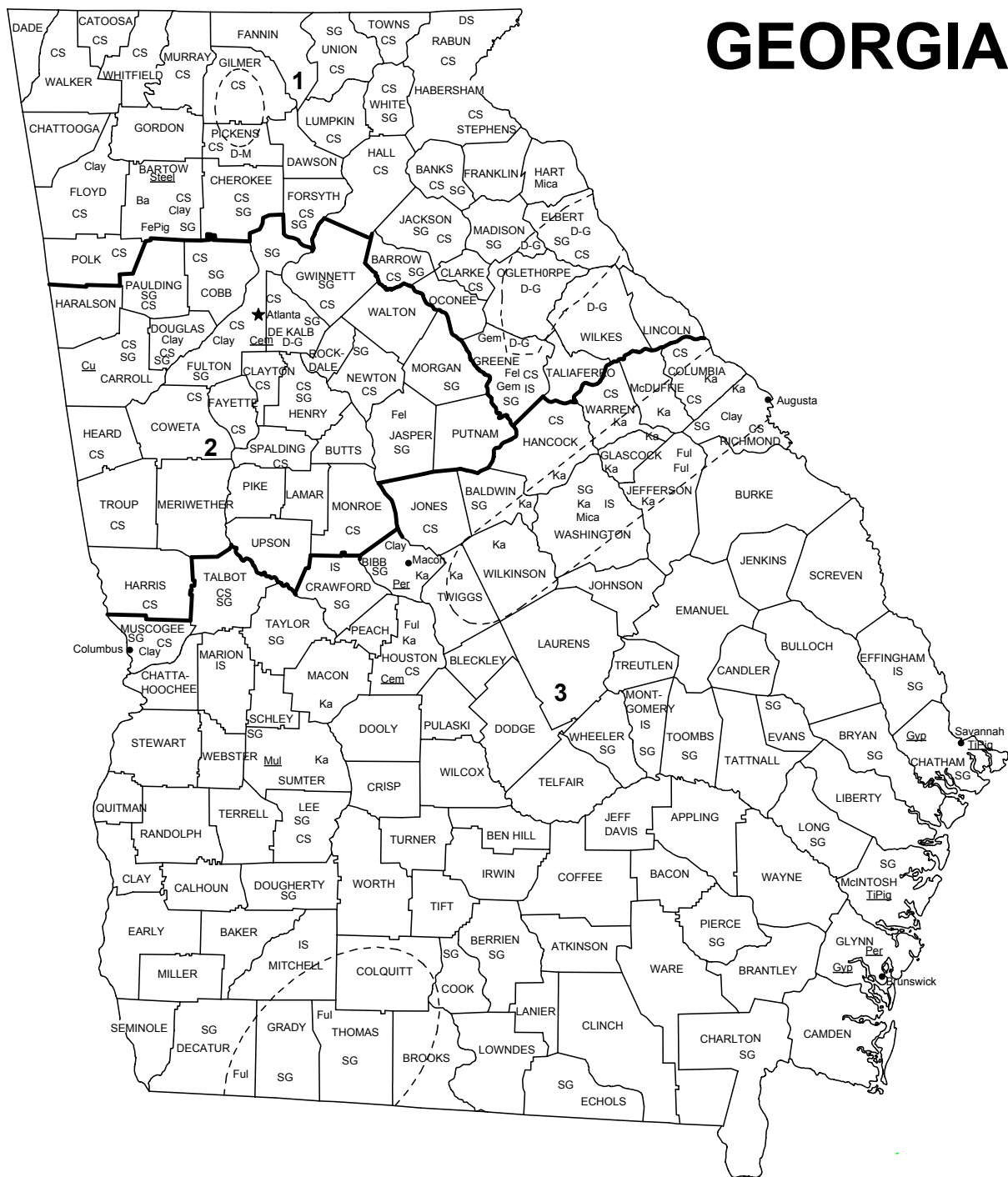


# GEORGIA



## LEGEND

- County boundary
- ★ Capital
- City

1 — Crushed stone/sand and gravel districts

0 50 Kilometers

## MINERAL SYMBOLS (Major producing areas)

Ba	Barite	DS	Dimension stone	Mica	Mica
<u>Cem</u>	Cement plant	Fel	Feldspar	<u>Mul</u>	Synthetic mullite plant
Clay	Common clay	FePig	Iron oxide pigments	<u>Per</u>	Perlite plant
CS	Crushed stone	Ful	Fuller's earth	SG	Construction sand and gravel
<u>Cu</u>	Copper plant	Gem	Gemstones	<u>Steel</u>	Steel plant
D-G	Dimension granite	<u>Gyp</u>	Gypsum plant	<u>TiPig</u>	Titanium dioxide pigment plant
D-M	Dimension marble	IS	Industrial sand	(---)	Concentration of mineral operations
		Ka	Kaolin		

# THE MINERAL INDUSTRY OF GEORGIA

**This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Georgia Geologic Survey for collecting information on all nonfuel minerals.**

In 2002, the estimated value<sup>1</sup> of nonfuel mineral production for Georgia was \$1.45 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about an 8% decrease from that of 2001<sup>2</sup> and followed a 3.1% decrease from 2000 to 2001. The State, for the third consecutive year, ranked seventh among the 50 States in total nonfuel mineral production value, of which Georgia accounted for about 4% of the U.S. total.

Georgia was by far the leading clay-producing State in the Nation in 2002, accounting for about 23% of total U.S. clay production (all kinds). Kaolin remained the State's foremost nonfuel raw mineral commodity, accounting for more than 45% of Georgia's estimated total nonfuel mineral production value and, of that, nearly 83% of its clay value. Crushed stone was second, accounting for about 31% of Georgia's nonfuel mineral value, followed by fuller's earth and cement (portland and masonry).

In 2001, increases in the values of dimension stone (up \$15.1 million), crushed stone (up \$15 million), and that of barite, crushed marble, and mica (up a combined \$4.5 million) were not enough to offset decreases in kaolin (down \$61 million) and cement (down \$19 million), resulting in a decrease for the year (table 1). All other changes were less than \$1 million, having minimal effect on the overall net total.

Based upon USGS estimates of the quantities produced in the United States during 2002, Georgia remained first among the 50 States in kaolin, fuller's earth, and iron oxide pigments (descending order of value); second in dimension stone, second of three barite-producing States, as well as second in mica; fourth in feldspar; and ninth in masonry cement. The State decreased to seventh from sixth in the production of crushed stone and to sixth from fourth in common clays. Additionally, the State was a significant producer of portland cement and industrial sand and gravel.

The following narrative information was provided by the Georgia Geologic Survey<sup>3</sup> in cooperation with representatives of Elberton Granite Association, the Georgia Mining Association, and the China Clay Producers Association.

Georgia's mining industry was dominated by industrial minerals—principally kaolin and crushed stone. Overall, the mining industry was strong and spent millions of dollars on research and development. Georgia was also one of the safest mining States in the Nation. In support of the industry, the Georgia Mining Association sponsored various mining industry-related activities. In 2002, the Association sponsored environmental and safety training and education seminars and workshops and awarded \$40,000 in college scholarships to 70 Georgia high school students in 32 counties. Additional information on mining in Georgia and the Georgia Mining Association can be found on the Internet at URL [www.georgiamining.org](http://www.georgiamining.org).

## Commodity Review

### *Industrial Minerals*

**Clay, Kaolin.**—Georgia's kaolin industry was concentrated in the four members of the China Clay Producers Association—Engelhard Corp., IMERYS Pigments and Additives Group, J.M. Huber Corp., and Thiele Kaolin Co. In 2002, the Association's members announced an after tax profit of \$36 million, or a return of 4.2% on the net investment, compared with a 2001 loss of \$93 million (China Clay Producers Association, 2003<sup>4</sup>). The return to profitability in 2002 was attributed to the restructuring that the kaolin companies accomplished as well as an improved market. The industry has continued to reduce payroll and expenses. Direct employment in the industry was 2,640, down from its peak of 4,500. Restructuring resulted in a shutdown of older unprofitable assets, which reduced the net investment almost 30% for the four companies in the kaolin business. The industry's investment in Georgia was \$860 million. Additional information on Georgia's kaolin and the China Clay Producers Association can be found at URL [www.kaolin.com](http://www.kaolin.com).

**Stone, Crushed.**—The Georgia crushed stone industry was largely dependent on heavy construction, and the market was almost evenly distributed between three major sectors—road and highway construction; residential, office, and shopping center construction; and public works projects.

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<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

<sup>2</sup>Values, percentage calculations, and rankings for 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also change.

<sup>3</sup>John Costello, Advanced Geologist, authored the text of the State mineral industry information provided by the Georgia Geologic Survey.

<sup>4</sup>A reference that includes a section mark (§) is found in the Internet Reference Cited section.

Florida Rock Industries, Inc.; Hanson Aggregates East; LaFarge Construction Materials; Martin Marietta Aggregates; and Vulcan Materials Co. were the largest producers. Aggregate quarries were in Georgia's Valley and Ridge (limestone and dolostone), Blue Ridge (metagranite and metaconglomerate), and Piedmont (granite and granitic gneiss) Provinces.

Other crushed stone manufacturers included Global Stone Corp., IMERYS Pigments and Additives Group, and J.M. Huber Corp. All three companies crushed and ground either limestone or marble from Valley and Ridge or Blue Ridge underground mines. End products were used in the manufacture of various commodities, including extenders for latex carpet backing, caulks, sealants, and paints. High brightness, chemically pure materials were included in pharmaceuticals and were used in coatings for high-quality papers in lieu of kaolin.

**Stone, Dimension.**—Georgia's dimension granite industry was concentrated in the five-county Elberton granite district (Elbert, Oglethorpe, Madison, Greene, and Wilkes Counties) in central eastern Georgia; however, most quarries and plants were in Elbert County. In 2002 there were approximately 45 active quarries in the district with 321 production workers and an annual payroll of \$7.2 million. The total workforce in the district, which included more than 150 granite-manufacturing operations, was approximately 2,400 persons with a total payroll of \$57.7 million. A shortage of skilled labor, however, was a limiting factor in granite production in the district. The Elberton Granite Association continued to assist member companies by providing wage supplements for new employees for a period of 3 months. Additionally, the association united with the Barre Granite Association (VT) and Northwestern Granite Manufacturers to present a "Buy American" promotion to consumers. Furthermore, the association joined a consortium of domestic stone producers to form the Natural Stone Council to educate architects and designers regarding the benefits of using natural stone products.

There were no company acquisitions or plant closings reported for 2002. The demand for Elberton's monumental-grade granite experienced a modest increase, reflected by a 2% to 2.5% increase in sales during the first half of 2002. Unfortunately, during the second half of the year, the industry experienced a significant slowdown. The district lost more than 95% of its rough stock sales in the Asian markets to China in 2001, and the trend continued through 2002. The volume of finished memorials being imported by brokers from China and India continued to grow and was having a serious impact on Elberton's granite producers.

#### **Internet Reference Cited**

China Clay Producers Association, 2003, Kaolin industry announces economic figures for the year 2002: Macon, GA, China Clay Producers Association, press release, June 4, accessed November 10, 2003, at URL <http://www.kaolin.com/Press/2002profitability.htm>.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN GEORGIA<sup>1, 2</sup>

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2000		2001		2002 <sup>p</sup>	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Common	1,500	5,200	1,360	4,580	1,310	4,890
Fuller's earth	919	81,400	879	80,600	1,420	135,000
Kaolin	7,660	877,000	7,020	816,000	6,390	670,000
Gemstones	NA	8	NA	8	NA	8
Sand and gravel:						
Construction	6,940	28,700	7,060	28,800	7,000	29,100
Industrial	651	12,200	W	W	W	W
Stone:						
Crushed	76,400 <sup>r 3</sup>	452,000 <sup>3</sup>	77,300 <sup>3</sup>	467,000 <sup>3</sup>	73,300	452,000
Dimension metric tons	74,200	11,400	108,000	26,400	112,000	21,900
Combined values of barite, cement, clays [bentonite (2001)], feldspar, iron oxide pigments (crude), lime, mica (crude), stone [crushed marble (2000-00)], and values indicated by symbol W	XX	151,000	XX	150,000	XX	136,000
Total	XX	1,620,000	XX	1,570,000	XX	1,450,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data.  
XX Not applicable.

<sup>1</sup>Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Excludes certain stones; kind and value included with "Combined values" data.

TABLE 2  
GEORGIA: CRUSHED STONE SOLD OR USED, BY KIND<sup>1</sup>

Kind	2000				2001			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	18 <sup>r</sup>	W <sup>r</sup>	W <sup>r</sup>	\$6.17 <sup>r</sup>	18	W	W	\$6.27
Marble	6	(2)	(2)	(2)	6	(2)	(2)	(2)
Granite	54	66,100	\$388,000	5.87	53	66,700	\$401,000	6.02
Quartzite	2	W	W	4.50	2	W	W	4.59
Total or average	XX	76,400 <sup>r</sup>	452,000	5.91	XX	77,300	467,000	6.04

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

<sup>2</sup>Withheld from total to avoid disclosing company proprietary data.

TABLE 3  
GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE<sup>1,2</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):	1,570	\$15,200	\$9.66
Riprap and jetty stone	169	578	3.42
Total or average	1,740	15,800	9.05
Coarse aggregate, graded:			
Concrete aggregate, coarse	11,600	80,700	6.94
Bituminous aggregate, coarse	7,320	53,100	7.26
Bituminous surface-treatment aggregate	W	W	9.37
Railroad ballast	849	4,740	5.58
Other graded coarse aggregates	5,580	32,900	5.90
Total or average	25,400	172,000	6.76
Fine aggregate (-3/8 inch):			
Stone sand, concrete	W	W	6.53
Stone sand, bituminous mix or seal	W	W	6.70
Screening, undesignated	1,440	6,000	4.16
Other fine aggregates	6,760	40,700	6.03
Total or average	8,200	46,700	5.70
Coarse and fine aggregates:			
Graded road base or subbase	13,100	71,400	5.46
Crusher run or fill or waste	1,070	5,540	5.16
Other coarse and fine aggregates	2,900	12,900	4.44
Total or average	17,100	89,800	5.26
Other construction materials	343	1,620	4.73
Agricultural limestone	(3)	(3)	6.24
Unspecified: <sup>4</sup>			
Reported	24,000	139,000	5.77
Estimated	500	2,800	5.67
Total or average	24,500	142,000	5.77
Grand total or average	77,300	467,000	6.04

W Withheld to avoid disclosing company proprietary data; included with "Other."

<sup>1</sup>Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

<sup>2</sup>Excludes marble from total to avoid disclosing company proprietary data.

<sup>3</sup>Withheld to avoid disclosing company proprietary data; included in "Grand total."

<sup>4</sup>Reported and estimated production without a breakdown by end use.

TABLE 4  
GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE AND DISTRICT<sup>1, 2</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) <sup>3</sup>	404	2,770	W	W	W	W
Coarse aggregate, graded <sup>4</sup>	W	W	15,700	113,000	W	W
Fine aggregate (-3/8 inch) <sup>5</sup>	2,870	15,700	W	W	W	W
Coarse and fine aggregate <sup>6</sup>	6,330	31,600	10,000	54,800	716	3,510
Other construction materials	244	1,040	78	431	21	155
Agricultural <sup>7</sup>	W	W	--	--	--	--
Unspecified: <sup>8</sup>						
Reported	5,300	34,600	4,610	28,600	14,100	75,600
Estimated	500	2,800	--	--	--	--
Total	23,400	134,000	36,400	236,000	17,500	96,800

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes marble from total to avoid disclosing company proprietary data.

<sup>3</sup>Includes riprap and jetty stone and other coarse aggregates.

<sup>4</sup>Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

<sup>5</sup>Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.

<sup>6</sup>Includes crusher run (select material or fill), graded road base or subbase, and other coarse and fine aggregates.

<sup>7</sup>Includes agricultural limestone.

<sup>8</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand) <sup>2</sup>	2,900	\$12,300	\$4.24
Concrete products (blocks, bricks, pipe, decorative, etc.)	154	848	5.51
Other miscellaneous uses <sup>3</sup>	137	589	4.30
Unspecified: <sup>4</sup>			
Reported	2,120	7,350	3.47
Estimated	1,800	7,700	4.39
Total or average	7,060	28,800	4.08

<sup>1</sup>Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes asphaltic concrete aggregates, road base and coverings, and fill.

<sup>4</sup>Reported and estimated production without a breakdown by end use.



TABLE 6  
GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY USE AND DISTRICT<sup>1, 2</sup>

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 2		District 3	
	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products <sup>3</sup>	413	2,270	2,640	10,900
Other miscellaneous uses <sup>4</sup>	108	500	30	89
Unspecified: <sup>5</sup>				
Reported	138	576	1,980	6,780
Estimated	510	2,400	1,200	5,300
Total	1,170	5,740	5,890	23,000

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Districts 1 and 2 are combined to avoid disclosing company proprietary data.

<sup>3</sup>Includes plaster and gunite sands.

<sup>4</sup>Includes asphaltic concrete aggregates, road base and coverings, and fill.

<sup>5</sup>Reported and estimated production without a breakdown by end use.